

S/N TBD
Docket: CS02-096
Group art unit : TBD

Date September 12, 2003

To: Commissioner of Patents and Trademarks
P.O. Box 1450 Alexandria, VA 22313-1450

Fr: William J. Stoffel Reg. No. 39,390 Cust No. 30402
PMB 455
1735 Market St - Suite A
Philadelphia, PA 19103

Subject:

Serial No. TDB
Docket cs02-096
File Date: with application
Inventor: Lin et al.

Title: Half Tone Alternating Phase Shift Masks

Group art unit: TBD

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO A820 (also PTO-1449), Information Disclosure Citation and references.

CERTIFICATE OF MAILING OR EXPRESS MAIL

I hereby certify that this correspondence is being deposited with the United States Postal Service as express mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on September 13, 2003.

Signature/Date William J. Stoffel
William J. Stoffel Reg. No. 39,390
Customer number 30402

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The following Patents and/or Publication are submitted to
comply with the duty to disclose under CFR 1.97-1.99 and 37
CFR 1.56.

US 6,410,191B(Nistler et al.) that shows a single trench
alternating PSM.

US 5,766,829(Cathey, Jr. et al.) shows a chromeless phase
shift mask comprised of a pattern of parallel spaced phase
shifters.

US 6,458,495B1(Tsai, et al.) shows a dual trench with
undercut, alt-PSM.

US 6,355,399b1(Sajan et al.) shows a method for a dual
damascene pattern comprising: exposing a one photoresist
layers using a grey tone mask.

US 6,482,554(Matsunuma) shows a for a method for a dual
damascene pattern comprising: exposing two photoresist layers
using a grey (tri-tone) mask.

S. Vaidya, *Phase-Shifting Photomasks*, Semiconductor
fabtech, Edition 1, Issued September 1994, S. Vaidya, AT&T

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Bell Laboratories, Murray Hill, New Jersey, USA, Website:
<http://www.semiconductorfabtech.com/features/lithography/articles/body1.171.php3> , 5/7/03

John S. Petersen, et al., Development of a Sub-100nm Integrated Imaging System Using Chromeless Phase-Shifting Imaging with Very High NA KrF Exposure and Off-axis Illumination, found on website;
<http://www.advlitho.com/content/Papers/SPIE microlith 02/4691-50 Petersen Conley et al.pdf> , May 8, 2003 , discusses Chromeless Phase shift mask techniques.

Gerold, et al., *Multiple Pitch Transmission and Phase Analysis of Six Types of Strong Phase-Shifting Masks*, This material was presented at SPIE's 26th Annual International Symposium on Microlithography as presentation number 4346-72 , found on website:
<http://www.advlitho.com/content/Papers/4346-72paper.pdf> May 8, 2003. This reference discusses alternating phase shift masks.

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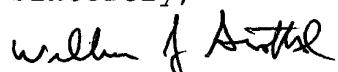
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Armen Kroyan and Hua-yu Liu, *Effects of altPSM Design on Image Imbalance for 65 nm, Semiconductor International,*

2/1/2003 [http://www.e-](http://www.e-insite.net/semiconductor/index.asp?layout=article&articleId=CA273367&spacedesc=webex)

insite.net/semiconductor/index.asp?layout=article&articleId=CA273367&spacedesc=webex)

Sincerely,



William J. Stoffel

Reg. No. 39,390

Customer number 30,402

***EXAMINER:** Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.